

Appl. No. 10/550,344  
Amendment and/or Response  
Reply to Office action of 9 July 2010

SEP 09 2010

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**Amendments to the Claims:**

A listing of the entire set of pending claims (including amendments to the claims, if any) is submitted herewith per 37 CFR 1.121. This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

1-11 (Canceled)

12. (New) A medical imaging system comprising:

a memory that is configured to store data corresponding to a three-dimensional region of interest that includes at least one object of interest,

a calculation unit that is configured to:

identify a segment of interest corresponding to a contour of the object of interest, by identifying points in the segment of interest having similar characteristics based on the data,

identify a plurality of sub-segments within the segment of interest, boundaries of the sub-segments being based on variations of at least one characteristic within the segment of interest, and

remove select sub-segments from the segment of interest to form an other segment of interest corresponding to the contour of the object of interest, and

a display unit that is configured to display the segment of interest, the boundaries of the sub-segments, and the other segment of interest.

13. (New) The system of claim 12, wherein the boundaries of the sub-segments are determined by determining local minima and watersheds within the segment of interest.

14. (New) The system of claim 13, wherein the at least one characteristic includes distances of the points in the segment from an edge of the segment.

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15. (New) The system of claim 12, wherein the at least one characteristic includes distances of the points in the segment from an edge of the segment.
16. (New) The system of claim 12, wherein the at least one characteristic includes intensity values of the points in the segment.
17. (New) The system of claim 12, including merging an initial plurality of sub-segments to form the plurality of sub-segments.
18. (New) The system of claim 17, wherein the merging is based on distances of the points in the segment from an edge of the segment.
19. (New) The system of claim 17, wherein the merging is based on intensity values of the points in the segment.
20. (New) The system of claim 12, including a user interface that allows a user to identify one or more of the select sub-segments to remove based on the display of the segment of interest and the boundaries of the sub-segments.
21. (New) The system of claim 12, wherein the display unit is configured to render a perspective view of the segment of interest and one or more boundaries of the sub-segments.
22. (New) The system of claim 12, wherein the one or more boundaries are displayed by displaying the sub-segments in different color.
23. (New) The system of claim 12, wherein at least one of the select sub-segments is removed based on a characteristic of the boundary of the sub-segment.

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24. (New) The system of claim 23, wherein the characteristic of the boundary includes a surface area of the boundary.

25. (New) The system of claim 23, wherein the characteristic of the boundary includes a ratio of a surface area of the boundary to a surface area of the sub-segment.

26. (New) The system of claim 12, including a medical imager that provides the three-dimensional (3D) digital data.

27. (New) The system of claim 12, wherein the similar characteristics include measures of intensity and texture associated with the points.

28. (New) A non-transitory computer-readable medium that stores a computer program that, when executed by a processor, causes the processor to:

- read data corresponding to a three-dimensional region of interest that includes at least one object of interest,

- identify a segment of interest corresponding to a contour of the object of interest, by identifying points in the segment of interest having similar characteristics based on the data,

- identify a plurality of sub-segments within the segment of interest, boundaries of the sub-segments being based on variations of at least one characteristic within the segment of interest,

- remove select sub-segments from the segment of interest to form an other segment of interest corresponding to the contour of the object of interest, and

- display the segment of interest, the boundaries of the sub-segments, and the other segment of interest.

29. (New) The medium of claim 28, wherein the boundaries of the sub-segments are determined by determining local minima and watersheds within the segment of interest.

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30. (New) The medium of claim 28, wherein the program causes the processor to determine distances of the points in the segment from an edge of the segment to facilitate identifying the boundaries of the sub-segments.

31. (New) The medium of claim 28, wherein the program causes the processor to remove at least one of the select sub-segments based on a surface area of the boundary of the sub-segment.